

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) An image processing apparatus, comprising:

a first sensor having a plurality of reading elements arranged in the a primary scanning direction;

a second sensor having a plurality of reading elements arranged in the primary scanning direction, the second sensor being disposed a predetermined number of lines apart from the first sensor in the a secondary scanning direction;

an integral correction portion for correcting a data output time difference due to the a position difference between the first and the second sensors by ~~a line unit~~ an amount corresponding to an integral number of line units; and

a fractional correction portion for correcting the data output time difference due to the position difference between the first and the second sensors by ~~a unit~~ an amount corresponding to less than one line unit.

2. (Currently Amended) The image processing apparatus according to claim 1, further comprising:

~~changing means for changing a relative speed of the first and the second sensors moving relatively to an original image in accordance with a scaling ratio; and~~

a control portion for enabling the fractional correction portion when a fraction is generated adding to integral lines of output time difference between the data from

the first sensor and the data from the second sensor after changing a scaling ratio of an original image, wherein the change in the scaling ratio causes a change in the relative speed of the original image to the first and the second sensors to an original image.

3. (Currently Amended) The image processing apparatus according to claim 2, further comprising a third sensor having a plurality of reading elements arranged in the primary scanning direction, the third sensor being disposed a predetermined number of lines apart from the first sensor in the secondary scanning direction.

4. (Original) The image processing apparatus according to claim 3, wherein the first, the second and the third sensors read red, green and blue components of an original image, respectively.

5. (Original) The image processing apparatus according to claim 4, wherein the first, the second and the third sensors make up a contraction type color CCD sensor.

6. (Currently Amended) The image processing apparatus according to claim 1, ~~wherein~~ comprising a black fine line detection portion ~~is provided for~~ detecting a black fine line included in image data, ~~and~~

wherein the fractional correction portion is enabled if ~~the~~ a width of the black fine line is greater than a predetermined value, and

~~while~~ wherein the fractional correction portion is disabled if the width of the black fine line is equal to or less than a the predetermined value on the basis of the an output signal of the black fine line detection portion.

7. (Currently Amended) An image processing apparatus, comprising:
a sensor disposed linearly in ~~the~~ a primary scanning direction, the sensor reading an ~~original image after decomposing the image~~ an image that has been decomposed into plural colors;
an optical system for projecting light from the ~~original~~ image onto the sensor;
and
a correction portion for correcting a misregistration of the colors in the primary scanning direction due to a chromatic aberration of the optical system, the correction portion performing ~~the~~ a misregistration correction for each of plural areas divided in the primary scanning direction.

8. (Currently Amended) The image processing apparatus according to claim 7, wherein the sensor includes line sensors for red, green and blue colors arranged by a predetermined pitch in ~~the~~ a secondary scanning direction.

9. (Currently Amended) The image processing apparatus according to claim 7, wherein a predetermined test image is read ~~for each of machines that are equipped with~~ according to a characteristic of a machine coupled to the image processing apparatus ~~so that~~ and wherein information for the correction for each area is obtained from the image data.

10. (Currently Amended) The image processing apparatus according to claim 9, wherein the test image is a ladder chart in which black lines are arranged by a predetermined pitch in the primary scanning direction ~~as the test image~~, a position shift among barycenters of the obtained red, green and blue image data is calculated, and boundaries of the areas and correction coefficients for the areas are obtained as ~~the~~ information for correction for each area in accordance with a distribution of the position shift among the barycenters of the red, green and blue image data in the primary scanning direction.

11. (Currently Amended) An image processing apparatus for performing a correction process of color image data obtained by an image sensor having a structure in which a plurality of element arrays are arranged ~~longitudinal in the~~ longitudinally in a primary scanning direction in parallel and separated by a predetermined pitch in ~~the~~ a secondary scanning direction, the apparatus comprising:

a plurality of interline correction ~~means having~~ portions that use different reference colors for ~~correction different from each other, for~~ correcting a misregistration among the element arrays of the image sensor in the secondary scanning direction; and

a correction output ~~means~~ portion for outputting the image data corrected in accordance with the image data output by the plural interline correction ~~means~~ portions.

12. (Currently Amended) An image processing apparatus for performing a correction process of red, green and blue image data obtained by an image sensor including red, green and blue element arrays arranged ~~longitudinal in the~~ longitudinally in a primary scanning direction and arranged in parallel and separated by a predetermined pitch in ~~the~~ a secondary scanning direction, the apparatus comprising:

a plurality of interline correction ~~means~~ portions for correcting a misregistration among the red, green and blue element arrays of the image sensor in the secondary scanning direction, each interline correction ~~means~~ portion using one of red, green and blue colors as a reference color for correction; and

a correction output ~~means~~ portion for outputting an average of the image data for each color output by the plural interline correction ~~means~~ portions, as the corrected image data.

13. (Currently Amended) A color image processing apparatus, comprising;
a fine line decision portion for deciding whether the present pixel is on ~~the~~ a fine line or not for plural image data having different wavelength components read by an image reading device ~~reading means~~;

a density correction portion for performing correction by increasing a density of image data of the corresponding wavelength component in ~~the~~ a present pixel when the present pixel is on a fine line on the basis of ~~the~~ a signal from the fine line decision portion; and

a chroma decision portion for deciding whether the present pixel ~~is~~ has a chromatic color or an achromatic color using the ~~an~~ output value of the density correction portion.

14. (Original) The color image processing apparatus according to claim 13, wherein the fine line decision portion detects one- or two-dot width fine lines with a high density.

15. (Original) The color image processing apparatus according to claim 13, further comprising a print image data generation portion for generating image data for printing using the output value of the density correction portion.

16. (Currently Amended) The color image processing apparatus according to claim 13, wherein the density correction portion performs correction by increasing a density of image data of wavelength components except the for a wavelength component having ~~the best MTF~~ best modulation transfer function (MTF) characteristics.

17. (Currently Amended) The color image processing apparatus according to claim 13, ~~wherein the line~~ wherein:

a sensor included in the image reading device ~~reading means~~ has a plurality of element arrays having corresponding to different wavelength components, the plural element arrays being disposed separately ~~separate from one another~~ in the a secondary scanning direction, ~~direction different from a primary scanning direction,~~

an interline correction portion is provided for correcting a phase shift among image data of the plural different wavelength components due to a misregistration among the plural element arrays, and

the density correction portion performs correction by increasing a density of image data of the a first wavelength component, and ~~to be processed by the interpolation process when~~

the interline correction portion performs ~~the correction~~ by processing image data of the first wavelength component by an interpolation process.

18. (Currently Amended) The color image processing apparatus according to claim 13, wherein the density correction portion performs correction ~~switching by~~ applying a first density correction quantity in the a case where the fine line decision portion decides that the present pixel is on a fine line for each of image data of all wavelength components, and by applying a second density correction quantity in the a case where the fine line decision portion decides that the present pixel is on a fine line only for a part of the wavelength components, ~~and~~ the second density correction quantity is being set to a value less than the first density correction quantity.

19. (New) The color image processing apparatus according to claim 17, wherein the density correction portion performs correction by increasing a density of image data of a second wavelength component and without increasing a density of image data of a third wavelength component, and

wherein the interline correction portion performs correction by processing the image data of the first and second wavelength components by the interpolation process using the image data of the third wavelength component as a reference.